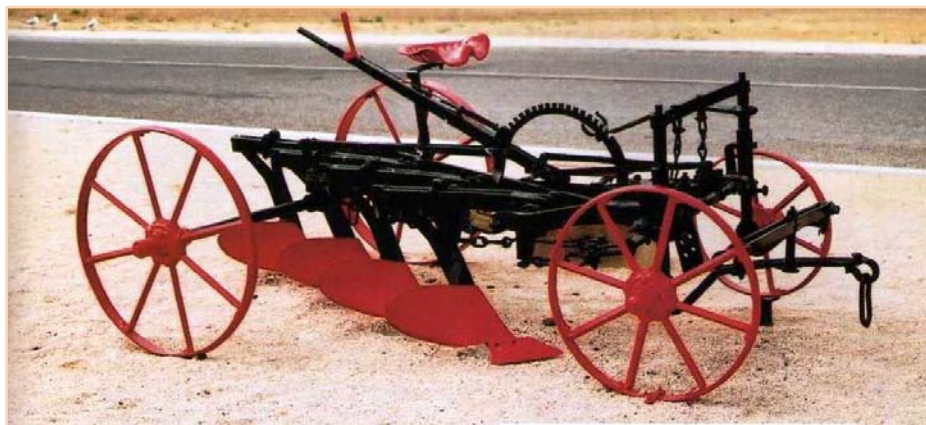


## 18<sup>th</sup> State History Conference

Session Title: 'Breaking Ground' Held: Sunday 2 August 2009

'Digging up the Plough' (Revisiting the stump-jump plough invention)

Presenter: Josephine Wundersitz



**Introduction:** It is a great pleasure to be back on my home ground of beautiful Yorke Peninsula. When I was in primary school I always drew the map of Australia with an enormous leg at the bottom – being proud of my place in the world. Here I wish to acknowledge it wasn't just my place but also that of the Narungga people who are the traditional owners.

**Why History?** – My early experience of history related to Kings, Queens, battles and dates - with a bit of ancient Greek thrown in. But, I now find it more intriguing as it can reveal ...

- the lives of remarkable people
- patterns and trends of change
- creative highlights that made a big difference in the lives of working people

The stump-jump plough was one of those highlights that had its beginnings on Yorke Peninsula and has become something of an Australian historical icon. According to a country paper of 1876 it stated that this new implement would '*cause a complete revolution in tilling uncleared land.*' And so it did!

**But why dig up a memory of the plough today?** For me there are three reasons.

- Firstly, the story of the plough still has relevance because it demonstrates that special human spirit of problem-solving and progressive thinking that is still necessary today.
- Secondly, it is a reminder that Yoke Peninsula is no longer the virgin land it once was, but an environment that has been shaped by evolving farming methods.
- Thirdly, the plough story is a part of my own family history, so this conference has motivated me to sort through my own archival material.

**The stump-jump plough invention,** according to popular recorded history, is attributed to Richard Bowyer Smith with improvements and manufacture being carried out by his brother Clarence Smith. There is still some controversy as to *which* brother deserved most of the credit. But, despite any confusion, there is no doubt that the idea for this particular plough was spawned in 1876 on the Smith Kalkabury farm. (Kalkabury being a small area near the present town of Arthurton) and four years later it was manufactured in factory at Ardrossan.

**Simultaneous nature of invention** is worth mentioning and although I will give the Smith family some focus, I want to recognize the other farmers and machinists who applied their creative minds to very similar types of plough during the same era. As many farmers faced the same cultivation problem, it was only natural that a number of people applied their creative skills to arrive at similar solutions. Therefore, I do not find it unusual that others also claimed the plough's invention and the following names are frequently found in historical records.

- Charles Branson of Stockport
- James Stott from Alma
- Osmund Bull and Robert Shapland – Victoria
- James Martin of Gawler in consultation with Charles Mullens of Wasleys
- Mellor Brothers
- Whittaker blacksmith shop of Dowlingville

### **Stumped by the stump! What caused the stump problem?**

During the 1800's clearing the mallee was extremely slow and back-breaking work. Although according to my late father Syd Wundersitz, most of the mallee had been cleared by the time he was 14 years of age ... which was in 1919. This rapid clearing after 1900 was due the gangs of professional tree-fellers which had flocked to the district. (Note: Ironically on the day this paper was presented, it was National Tree Day!) Of course the big problem associated with mallee-clearing was the stumps that remained buried in the path of cultivating machinery and also the constant growth of young shoots from these stumps as the mallee tried to regenerate itself.

So what were the answers?

### **The Answers to the mallee-clearing problem**

**Mullenising:** One answer came from a farmer by the name of Charles Mullins, who introduced a technique that, not surprisingly, became known as 'Mullenising'. This method entailed ...

- Firstly, rolling the cleared ground with large rollers (sometimes being made from old boilers that had come from the mill furnaces).
- The paddock was then burnt and finally a spiked V shaped spiked log was dragged over the ground so the seed could be scratched in. Later, on some farms, the V shaped log gave way to a more complex piece of machinery. This was based on the John Fowler 'balanced' plough which was driven by cables and could be driven from either end.
- The next season the whole process was repeated again until the mallee finally died. However, many stumps still remained as obstacles which required grubbing by hand.

**The stump jump plough:** The most successful solution evolved on the Smith property where the answer came about by possible accidental means. One folk story relates how a farmer was ploughing when a bolt broke causing the plough to jump over the stump. We do not know how the Smith brothers realized that 'jumping the stump' was a possible solution. However, it is understood that they both interchanged ideas and a plough was constructed using a mechanical device of hinges, levers and weights – so the individual plough shares would jump when hitting a stump and then return to the ground.

**The first trial:** The first trial of the plough they called the 'Vixen' took place in June 1876. It was not fully successful at first as the weight of the materials caused the horses some difficulties in pulling the implement. This prompted some jeering from local farmers, so it was back to the workshop to fix the obvious faults. Later, in that same year the Smiths gained two 1st prizes at

the Moonta Show in the single and triple furrow plough categories. In order to demonstrate the plough at the Adelaide Show and in the hope that the plough would become a feasible working implement, an application for a '*patent pending*' was submitted.

**Patents can have both positive and negative outcomes.**

- They do protect the original designs and give individuals the sole right to make or sell their invention.
- On the other hand, patents can limit economic competition and cut out alternative contributors.
- In the era of the late 1870's patents were very expensive, so the first stump-jump plough patent was only taken out as '*pending for one year*'. It was granted in February 1877 after which it lapsed ... which was good in some ways as it encouraged other farmers to put forward and market their own designs.
- As the original patent certificate was in the name of *R.B. Smith and Co.* later it gave Richard Smith a legal right to claim the invention as entirely his own and subsequently could put in a request for some government money.
- According to oral history, because Clarence was still apprenticed to his brother Richard, his name was not included on the provisional plough patent certificate.

**The Smith Family:** In regard to the Smith family, old papers reveal that some relationship difficulties must have developed between Richard, Clarence and their father Owen. So regrettably the plough was not the product of co-operative family teamwork! Here are some quick thumbnail sketches of the three men involved in the plough's creation ...

**Father Owen** (My Great Great Grandfather)

- Born in 1807, he migrated from Surrey England and arrived here in 1838.
- A carpenter and builder by trade; at first he purchased land on North Terrace where he built two houses.
- Like many early pioneers, he spent some time on the Victorian gold fields.
- He was an enterprising businessman ... managing such aspects as forming the family company in Richard's name, organizing finance to start his sons' projects, arranging his younger son's apprenticeship and applying for patents.
- He also worked on the Arthurton farm, assisting in the blacksmith's shop and the Ardrossan factory.

**Richard**

- Born 1837, he was a machinist, farmer, hotel owner, and dealer who spent a lot his time as a traveling salesman for J. G. Ramsey and Co.
- He was an adventurous business man, as towards the end of 1876 he left the farm to work on the building of a hotel at Arthurton and sold his share of the property to Clarence.
- From 1876 he did not engage in any further work on the plough but concentrated on the hotel construction and raising some pedigreed horses.
- The hotel venture was not a financial success and sadly the horses died, so Richard relinquished the hotel licence (June 1881) and in desperation for money he made a claim for the plough's invention in 1882 to get a £500 government reward. Two years later he moved to Western Australian to continue a career in hotel management and numerous business enterprises.

## Clarence

- Clarence was born in 1855 in a tent on the Alma goldfields.
- Although being 18 years younger than Richard, he must have played an important role in the original design and manufacture of the plough ... judging by the dated, signed and hand-drawn diagrams that have survived.
- In 1880, Clarence began the factory at Ardrossan to seriously manufacture the plough and in 1882 he combined his ideas with that of James Stott – one of the other inventors.

Regardless of *who* spawned the original idea, or claimed to be the first inventor, my particular interest is *how* the idea was nurtured into a very useful and successful invention. The manufacture of the plough on a commercial scale would require further experimentation, community support, finance, and a leadership that displayed both tenacity and resilience. Here Clarence deserves some credit for his Ardrossan plough factory which is still commemorated today in the Ardrossan and District Museum that is housed on the original factory site.

**The Ardrossan Factory** was quite an outstanding achievement in its day. Acting on the enthusiasm of the local farmers, Clarence moved to Ardrossan where there was access to seaport transport for the receiving of raw materials and the dispatching of ploughs. It began as a stone-fronted workshop erected with help from his father Owen and Mr. G. Scarfe of Harris Scarfe Ltd. who offered credit for one year to assist with the supply of steel materials.

**The Factory Developed** and quickly expanded in size to make a variety of implements and machine parts. These included ...

- four, five and six furrow ploughs with seats
- seat operated lever
- removable slot shares
- a seed drill attached to a plough

Orders came from far and wide including Queensland, Victoria, and Western Australia. There were also displays at the many famous field trials and country shows held at Bute, Paskeville and Agery where the C.H. Smith ploughs were always prominent winners. Evidently these trials attracted over 2000 farmers who travelled from all parts of the State by horse and buggy – an enthusiasm that is reminiscent of the Paskeville Field Days that are held today.

Clarence died only a month before his 46<sup>th</sup> birthday in 1901, but fortunately his sons (Glen and Alma) ably carried on the business and created an even greater variety of implements and parts.

### After 1903 the Smith catalogues featured ...

- 2 to 12 furrow ploughs and disc ploughs
- 9 to 17 types of cultivators
- scarifiers
- fire-rakes, 3 to 6 leaf harrows
- combination seed drills

Later, with the introduction of tractors the factory was given the sole agency for Twin City Truck and Tractors with the staff of mechanics now growing to one hundred. Sadly, it was the depression in the mid 1920's that finally led many businesses, farmers and the plough factory to sell out. The new owners Wiles & Co moved the business to Port Adelaide in 1935.

**The Good Dirt! The effects of the plough:** This invention had many effects on farming and by 1881 the plough invention caused ‘a scramble’ for scrub selections of land. Before then 2/3<sup>rd</sup> of the leased lands had been surrendered because clearing was too slow and costly ... but after 1881 only 5% of land selections were forfeited. Other benefits included ....

- time was saved
- more land was efficiently cultivated
- expense on broken machinery was drastically decreased
- there was a saving in man and horse power

It is interesting to note that some of these claims can now be made about *non-tilling*, proving that new methodologies are constantly being applied to adapt to our present farming conditions.

**Strides of Progress:** Over the years similar leaps forward have been made in farming. In the Adelaide research library I found a paper headed ... ‘Sickle & Scythe to Silicon Chip’ and I think that title says it all! In my lifetime I saw the huge change from bag to bulk-handling and just observing the Maitland farm of my youth which is now managed by Ben Wundersitz, I can see...

- more complicated and efficient machinery
- the application of agricultural research and experimentation
- a greater focus of proficiency in all areas of farm management

**The Future:** The plough may have lost some of its significance but the pioneering spirit of creative thinking is still essential today. The present problems of climate change, water/soil conservation, and the global economy are all very headache-making challenges! But rather do as my father did, which was to swap information in the pub on Friday nights – modern farmers now consult many areas of expertise from agronomists to accountants and develop community groups in support and protection of their land. But, as well as community efforts, I also believe in the creative power of *each* individual land worker who has the courage to try new ideas.

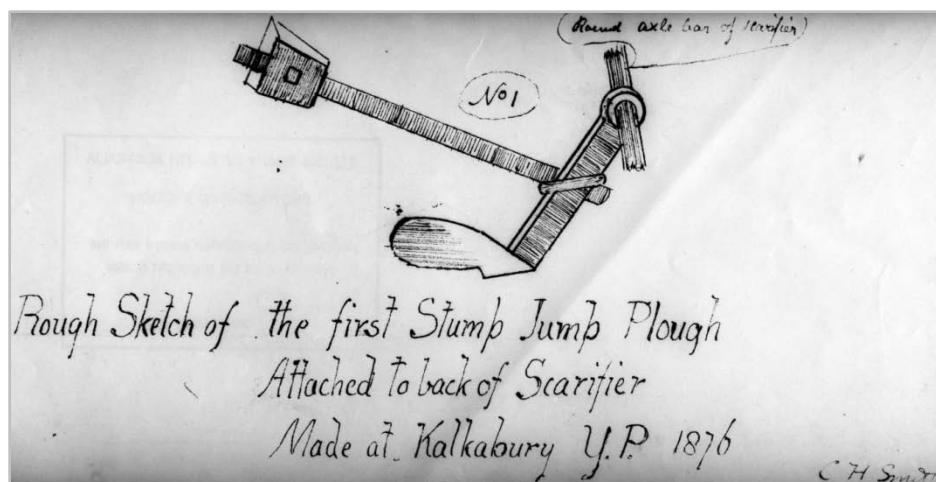
**Story of brother, John:** I will finish with a story of my brother John, which I think demonstrates the individual creative thinking that I have been talking about. One day my father and young brother were turning over damp oblong bales of hay in the paddock. It was a very time-consuming task walking from bale to bale and turning each one by hand with pitchforks. Suddenly, John said he had an idea and jumping into the utility, disappeared back to the farm sheds. Much to the annoyance of my father, John was gone for some time but eventually re-appeared with a strange kind of bull-bar welded onto the front of the vehicle. The utility was then driven down the pathways between the bales with the extended bar neatly knocking over each bale. My father naturally just stood there and in typical fashion said ... ‘Well bugger me!’ and hence boasted with pride about his son’s cleverness.

**The end of this Dig:** To conclude, I admire the resilient spirit that led to the stump jump plough invention that is still emulated by farmers today as they face the unique problems of 2009 and who are prepared to pass on this unique piece of ground in good health for the future generations. And along with the farmers I applaud all the diverse landowners who are contributing to the well-being of Yorke Peninsula from the Copper Triangle to the ‘Bottom End’.

(Note: ‘The Bottom End’ was the colloquial term used in my youth to refer to the southern end of Yorke Peninsula).

Josephine Wundersitz    [jowundy@sa.chariot.net.au](mailto:jowundy@sa.chariot.net.au)

**Bibliography** listed on next page.



## Bibliography

- Andre Roger - *Smith Clarence Herbert (1865-1901)* **Note:** should be (1855-1901)  
*Australian Dictionary of Biography, Supplementary Volume,*  
 Melbourne University Press 2005  
[www.adb.online.anu/AS10557b](http://www.adb.online.anu/AS10557b). (Richard and Clarence Smith)
- Bromby R - *Farming of Australia* Publisher Double Bay Aust. Pty. Ltd 1986
- Callaghan A R - 'From Sickle and Scythe to Silicon Chip' Adelaide Reference Library  
 Pamphlet 630.71C156
- Gordon D J - *The Central State of Australia* Vardon and Pritchard Printers 1903
- Hoad B - *Hotels and Publicans 1836 – 1993* (Revised 1999) Adelaide Reference Library
- Hughes W J – *A Century of Traction Engines* Pan Books 1972
- Meinig D W - *On the Margins of the Good Earth* Syracuse University 1963
- Neumann B E - *The Smith Brothers and the Stump Jump Plough* National Trust of SA Central  
 Yorke Peninsula Branch 1986
- Quick G A - *Remarkable Australian Farm Machinery, Ingenuity on the Land*  
 Rosenberg 1<sup>st</sup> Edition 2007
- Wheelhouse F - *Digging Stick to Rotary Hoe* Rigby 1973
- Whittaker - Lamshed K & Whittaker- Stock P - *History of the Whittaker Blacksmith Shop* (1977)  
 Adelaide Reference Library
- Wundersitz J.L. - Smith family papers inherited from Dulc Wundersitz, Beatrice Bowman and  
 Emma Sarah Smith